

*MANUAL FOR
FORM - FILL -
SEAL
MACHINE*

Title:

Two line Form Fill Seal Machine.

Type of Documentation:

Operating instructions.

Purpose of Documentation:

This documentation provides information on:

- The conditions of installation.
- The machine description.
- The electrical assembly.
- The basic operation instructions of the machine.

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S.No	Index	Page No
1.	SAFETY PRECATIONS	04
2.	SPECIFICATIONS	07
3.	INSTALLATION	08
4.	FFS MACHINE DESCRIPTION	13
5.	OPERATIONS	15
6.	HMI SCREENS	17
7.	OPERATING SEQUENCE	36
8.	MAINTANENCE	40
9.	ELECTRICAL DRAWINGS	44
10.	I / O LISTS	44

1 .SAFETY PRECAUTIONS:

1.1 General:

On receiving the Machine at site and before it is being put in to installation and commission, store the machine properly that is not exposed to water spillage or corrosive environment, to avoid any effect of damage on the machine components.

Before proceeding to install, operate, maintain or inspect this machine, please read this manual thoroughly, including its appendix and information attached. The machine should operate by trained persons. This machine should only be used after the operator acquired the knowledge of this machine, including safety precautions.

Ensure recommended restarting procedure in case of power failure during operation of the machine. Otherwise machine may not resume in a proper way.

Do not leave the machine unattended while it is switched ON. Ensure that all machine doors are closed at the time of machine operation.

The machine should operate by appropriately trained persons only.

The machine or system is to be operated in accordance with the appropriate specifications only and with due regard to the operating instructions.

When machine is in operation, operator should not touch in the areas of Dancing Cylinder, cup filler and other moving parts

Before switching the machine “ON” ensure that there are no manipulations or changes made to the recommended settings.

Before switching the machine “ON” ensure that no persons are still carrying repairs, adjustments or cleaning work on the machine.

Do not commence cleaning, maintenance or repair work until the main switch has been switched off.

Do not lean against the running machine ensure that adequate clearance is maintained around the machine.

Operator is requested to follow safety in the following areas of the machine.

- a. Electrical equipment's.
- b. Moving areas
- c. Screw limits

In this manual safety precautions are classified in to the following categories.

DANGER:

Mishandling or ill –use may create a dangerous situation where it is probable to get serious injuries or mortal wounds.

WARNING:

Mishandling or ill –use may create a dangerous situation where it is probable to get minor injuries or moderate lesions, or to cause material damage.

Depending on the situation, even those matters classified as WARNING may lead to a serious consequence. In the following chapters, safety precautions to be observed are written in detail. Those safety precautions written in the next pages, however, are particularly important. Please observe them at all times and use this machine correctly.

Precautions to use the machine safely.

DANGER:

Do not open the door of the control panel while the machine is in operation or when the electrical power is supplied. When circumstances require opening the door, take utmost care not to touch high voltage terminals or electrified parts.

Before adjusting the cutter blades, be sure to cutoff the main power supply, when it becomes necessary to work the machine while it is in operation, be careful so as not have hands or cloths get caught by the moving parts.

Cleaning work of sealing devices should always be done with the machine stopped.

Electrical type work such as providing the power supply cable to the machine should only be done by the qualified technician

Ground the machine according to the class III standard which is less than 100ohm at the grounding resistance. Do not work the machine with wet hands, to avoid receiving an electrical shock

WARNING:

Confirm if the electrical power supplied to the machine meets the specifications described in this manual operating the machine with the [power out of specifications will cause bursting or damage of the component.

Do not touch the sealers while power is supplied. Even after the power supply is cut off, do not touch the sealers until they cool down so as not to get burnt.

This machine is equipped with various monitoring systems. When the machine stops due to the functions of these systems do not resume the operations before ensuring the all the cause of abnormal conditions.

Press the emergency stop switch before threading the packing material film through the feeding rollers, to avoid the hand and /or clothes getting caught between the rollers.

Before cleaning the sealing bars, be sure stop the machine by pressing emergency stop switch or by cutting off the main power supply.

Before adjusting the cutter blades, be sure to stop the machine by pressing emergency stop switch or by cutting off the main power supply.

Before switching the machine “**ON**” ensure that there are no manipulations or changes made to the recommended settings.

Before switching the machine “**ON**” ensure that no persons are still carrying repairs, adjustments or cleaning work on the machine.

2. Specifications:

2.1 Summary of functions:

This is an automatic form – fill – seal machine which unwinds the roll stock of packing material (film), slits it in the center make it in to tubular form, seals it vertically, fills a set volume of granules supplied by the feeding device, seals filled tube horizontally and cuts packet and then discharges the packages made.

2.2 Specifications:

1. Overall dimensions:

Width: 1450 mm

Length: 1900 mm

Height: 2050mm (including hopper)

2. Package length and width:

1 gram: 48mm length, 25mm width

2 gram: 58mm length, 25mm width

3 gram: 68mm length, 25mm width

3. Sealing Method:

Vertical: Vertical seal by impulse sealing system Heaters are of Imported from Ropex Germany.

Horizontal: Horizontal seal by Ultra-Sonic sealing system is imported from Rinco Switzerland.

4. Winding of roll stock of packing material (film):

To be wound on a paper core with sealable side inside.

5. Web guiding system:

This machine is incorporated with automatic web align or web guiding system

6. Products to be packed:

Granules of Activated carbon, silica gel and molecular sieves.

7. Feeding system:

Pneumatic type volumetric filler with servo motor driven automatic weight adjustment.

8. Speed of the machine:

1 gram: 40 packages per minute

2 gram: 40 packages per minute.

9. No. of packaging line: 2 line**10. Machine weight:** approx. 1000kg**11. Consumption of Electricity:** Electrical AC 415V, 50 HZ, 3 PHASE,

At peak: 6.5 KW

Average: 4.0 kW

12. Compressed Air: 6 Bar required**3. INSTALLATION:****3.1 Moving, Handling, Installation:****DANGER:**

- ❖ While lifting the machine with crane be sure to use the one having the load capacity of one ton or more and be careful not to lose its balance.
- ❖ Be careful not to give a big shock to the machine while lifting or moving it.
- ❖ Move the machine to the exact location where it is to be installed while selecting space and location for machine, sufficient free space should be provided around the machine in order to inspect.
- ❖ Place the machine on an exact horizontal plane by adjusting the height of the machine mounts.

- ❖ Arrange the **3-phase** power supply for entire machine. Operating voltage must be **+ / - 5% of VAC**
- ❖ Make proper earth for the entire system.(**NOTE : the voltage across neutral and earth should be in 1.3 VAC**)

3.2 Initial Adjustments:

DANGER:

When adjusting the machine, be sure to cut off the main power supply to the machine.

1. Setting of the packing material (Film) :

- a. Mount the roll stock of packing material (film roll) on the mounting shaft.
- b. Apply the air to the mounting shaft to fix the roll position.
- c. Thread the packing material through the ultrasonic sensor provided above the mount shaft to guide the web and on to the rollers and slitters of the machine **referring to the illustration shown** switch on the film feeding push button watch the flow of packing material.

2. Setting of Packing Material (film) :

Referring to the illustration shown

3. Adjustment of Vertical Sealer :

Adjustment of vertical seal bar should be done referring to the **Figure shown** below

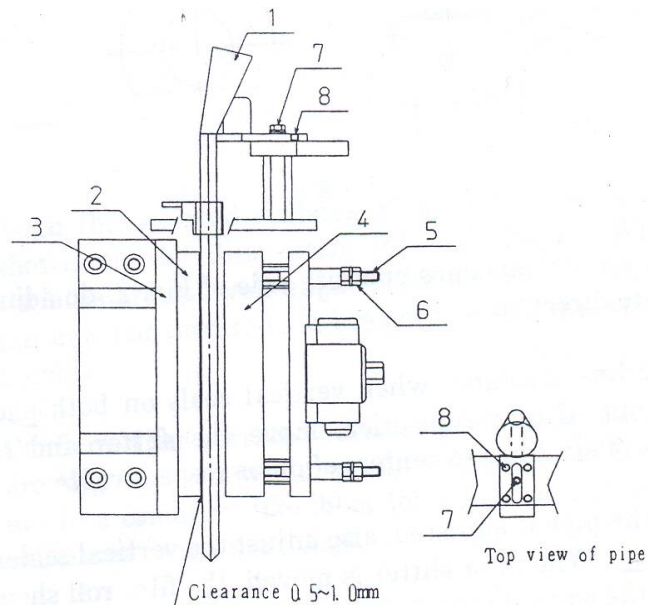
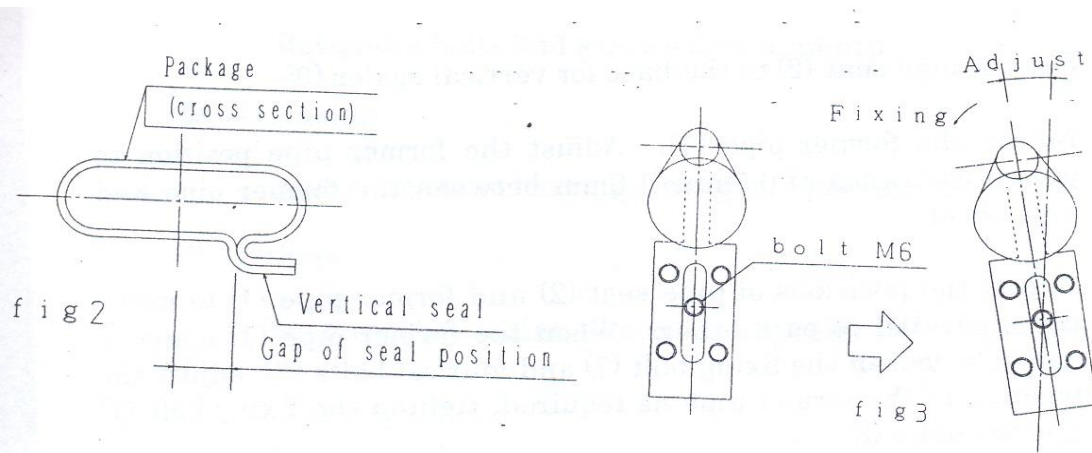


Fig.1

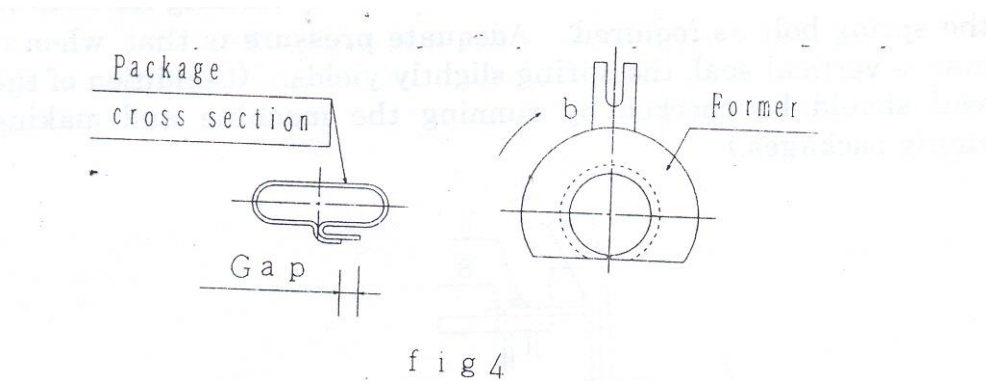
1. Set the pipe seat 2 to the base for vertical sealer.
2. Mount the former pipe (1). Adjust the former pipe position to give a clearance of 0.5 mm to 1mm between the former pipe and the pipe seat.
4. Adjust the position of pipe seat (2) and former pipe (1) to make them parallel to each other. when the former (1) leans to one side loosen the fixing bolt (7) and four set bolts (8), adjust the position of the former pipe as required, tighten the fixing bolt (7) and set bolts(8).
5. Adjust the position of the vertical seal bar (4) to make it parallel to the former pipe (1) by turning the nuts on the spring bolt as required.
6. Adjust the pressure of the vertical seal bar by turning the nuts on the spring bolt as required. Adequate pressure is that, when it makes vertical seal the spring slightly yields (condition of the seal should be checked by running the machine and making empty packages)

4. Adjustment of Vertical Sealer :

1. When the vertical seal is made out of the center position as shown on **figure 2 below** loosen the fixing bolt and turn the former pipe toward the direction of a as shown on figure 3 below.



2. When the former pipe is adjusted as shown in figure 3 above, both ends of the film will not meet at the vertical seal but with a gap. If the gap appears on the right side as illustrated in figure 4 below turn the former toward the direction of b as shown in figure 4.



3. When the gap appears opposite side of figure 2 do the adjustments in opposite direction.
4. When the vertical seals on both packages are made out of center position, move the slit and then, align centers of slit films to centers of pipes respectively.
5. When the pipe is adjusted, also adjust the vertical sealer to match the pipe. When the slit is moved, the film roll should also be moved the same distance.

5. Adjustment of Horizontal sealer :

Danger:

- ❖ Hitting both the horizontal seal bar and opposite side Ultra-sonic sealing bar without packing material (film) is Dangerous to the system it may cause damage to the system.
- ❖ It is important to adjust the pair of horizontal seal bars, one is ultrasonic and the other side is horizontal seal bar such a way to obtain a uniform pressure and water flow on the entire sealing surface.
- ❖ If the air flow not connected or if the temperature is excess, temperature controller and water flow switch give the alarm message on the HMI Screen .The front side of the water flow switch consisting of PT 100.
- ❖ For the adjustment of gap between the ultrasonic and sealer use the packing material film to be used for actual production for checking purpose fold the film in to two(with its sealing surface inside) insert it between the pair of seal bars and have the air cylinder accurate ON/OFF to check the alignment of surfaces and sealing pressure.

6. Adjustment of Cutting Device:

- ❖ For safety sake press the emergency stop switch and turn off the switch for the cutting device.
- ❖ Adjustment of cutter should be done keeping the front blade parallel to the rear blade. The vertical position of the cutter can adjusted by rotating the knob according to the pouch length and place of the cutting we can adjust accordingly.(if cutter is provided in the machine)

5. FFS MACHINE DESCRIPTION

CARRIER DISPLACEMENT ENCODER

This is used for the purpose of to carry the pouches from vertical seal place to cut position through the horizontal seal position with the help of the Carrier cylinder and it will gives to the accurate analogue input values to the plc.

Specifications:

Power supply	: 24 VDC
Operating temperature	: -30°C to 100°C
Oscillation	: 5 Hz to 2000Hz
Transducing Speed	: V max, -5 m/s

CUP FILLER SERVO MOTOR

This servo motor is provided to increase or reducing the weight of the material.

Specifications:

Power supply	: 1-Phase 200 V, 4 A
Capacity	: 400 W
Operating temperature	: 0 to 40°C
Operating humidity	: 85 % RH max.
Rated rpm	: 3000 rpm

SERVO DRIVE:

Servo drive provides the control signals to the servo motor like position, speed and torque. It receives the command from the PLC and provides respective control signal to the motor. There is a feedback from the servo motor regarding the status of the motor to the corresponding servo drive. This feedback is provided through an encoder.

Specifications:

Power supply	: 1-Phase 200-240 V, 6 A
Capacity	: 400W
Operating temperature	: 0 to 55°C
Operating humidity	: 90 % RH max.

PLC:

PLC stands for programmable logic controller which takes input, does some calculations on it based on the logic and provides an output.

Specifications:

No. of I/Os	: 40 (24 inputs, 16 outputs)
Type	: SINKING TRANSISTOR
Power supply	: 20-26 V DC
Operating temperature	: 0 to 55°C
Operating humidity	: 90 % RH max.

VERTICAL & HORIZONTAL SEALING SYSTEMS:

This RESISTRON temperature controller is an integral part of the “series 445” .its sole purpose to control the temperature of RESISTRON / RES heating elements which are used for mainly impulse-heat sealing PP and PE films.

Specifications:

Power supply	: 1-Phase 200-240 V, 6 A
Analog output	: 0 – 10 VDC
Operating temperature	: +5 to +45°C
Display	: LC display (green), 4 lines, 20 Characters.

6. OPERATIONS:

6.1 Control panel:

Illustrated below is the control panel, which is comprised of the following components.

1. Control unit : (HMI)

This unit is used for entering the data necessary to operate the machine. It is also used for monitoring the machine operations and for indicating abnormal conditions as alarms.

2 Start Switch/ Auto Cycle On :

The machine starts running in Auto cycle when this switch is pressed.

3 Stop Switch :

When the stop switch is pressed the machine stops at the end of an operating cycle.

4 Buzzer :

This will indicate the abnormal condition of the machine, and also when the alarm displays on the screen.

5 Emergency stop switch :

- ❖ This switch is to stop the machine immediately. This switch is for emergencies only.
- ❖ Under normal circumstances, the machine should be stopped by pressing the stop switch. When the machine is stopped by emergency stop switch while it is being operated at high speed, various mechanisms make crashing sound.
- ❖ Frequent stopping by the emergency stop switch will make screws, bolts and nuts loosened and will create too much play in the mechanisms.
- ❖ When the emergency stop switch is pushed in, it is locked at the pushed in position. To release it, turn the switch clock wise.

6 Pouch ready / Film Feeding :

By pressing this switch we can select the film feeding system activation, when the machine starts and also in running condition. This push button will switch on both unwind motor and cutter motor to forward the film.

7 Material feeding :

By pressing this switch we can select the material feeding system activation, when the machine starts and also in running condition.

8 Air on :

By pressing this pushbutton we can switch on Air and by pressing second time the same switch we can switch off the Air from the control panel.

9 Vertical Impulse 1 & 2 :

By pressing this switch we can select the Impulse sealer activation, when the machine starts and also in running condition.

10 Horizontal Impulse :

By pressing this switch we can select the Impulse sealer activation, when the machine starts and also in running condition.

11 Water temperature :

When this switch is pressed, water temperature indication is selected.

12 Vertical temperature controller :

For detail operation refer to the operation manual attached to this manual.

13 Horizontal Temperature controller :

For detail operation refer to the operation manual attached to this manual.

H.M.I SCREENS DESCRIPTION:

In initial stage when we are switch ON the control panel, firstly comes “WELCOME” on the HMI.

WELCOME :



- “WELCOME” screen has only one button i.e. ENTER command button.
- We will press the ENTER button automatically goes to next screen.

POUCH LENGTH SETTINGS:

The screenshot shows a control panel with a light green background. At the top left, the date and time are displayed as '02.12.2015 (WED)' and '12:28:50 PM'. A red rectangular box highlights the title 'POUCH LENGTH SETTINGS' in the top center. Below this, there are two settings: 'POUCH LENGTH' and 'OFFSET'. Each setting has a blue digital display showing '0.0' followed by 'mm'. At the bottom of the screen, there are two buttons labeled 'HOME' and 'MENU'.

1. Pouch set length

Pouch Set length which can be change from 0 to 90 mm we can enter required length by simply touching on the numerical value you will get the keypad and can be enter any required length.

2. Offset

Suppose if we have to set the pouch length 40 mm , but pouches will comes to 43 mm. now we have enter the 3mm value into the offset by simply touching on the numerical value you will get the keypad and can be enter any required offset length.

3. Vertical & horizontal seal ratio

To select the operating ratio of vertical seal and Horizontal seal.

PRODUCTION CONTROL

02.12.2015 (WED)	PRODUCTION CONTROL		12:18:09 PM	11
OUTPUT PER MINUTE			Pax/Min	0
TOTAL NUMBER OF POUCHES	0	RESET		
PRODUCTION TARGET	0			
COUNTER	ON	U.S AIR BI-PASS	ON	
CUTTER BI-PASS	ON	U.S TRIGGER BI-PASS	ON	
HOME		MENU		

1. Output per Minute

Which displays the machine output per minute per two line which will update for every one minute during machine running condition.

2. Pax/Min

Which displays the machine previous output per minute per two line which will update for every one minute during machine running condition.

3. Total Number of Pouches

This is continuous counter for machine output 0 to maximum value of nine digits. This can be reset by holding reset button. If we select the cup filler operation, then this counter starts, otherwise it will not work.

3 . Production Target

Production target can be entered in this counter this is continuous counter for machine output 0 to maximum value of eight digits. When total no. of pouches is

equal to production target buzzer will come, this can be reset by holding reset button on the main screen.

4. Counter

Turn the production counter turn on off by simply touching the ON/OFF button on the screen.




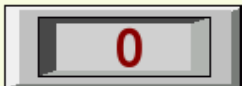




5. Cutter Bi-Pass

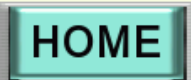

If you want run the machine with continuous output mode for role output switch on the cutter bi-pass button and it will switch off the cutter otherwise output will be sachets with cuter separates every sachet.

6. U.S Air & Trigger Bi-Pass

To turn of the horizontal sealing turn on the U.S trigger bi-pass button. To turn of the cooling air for the Ultrasonic converter and horn turn on the U.S Air Bi-Pass but it is advisable to turn on the ultrasonic cooling air as it reduces the life time of the Horn and converter of the horizontal sealing system.

VERTICAL IMPULSE

02.12.2015 (WED)		12:27:39 PM 12	
	VERTICAL SEALING-1	VERTICAL SEALING-2	
TEMPERATURE OK			
ACTUAL TEMPERATURE			
FAULT ACTIVE			
FAULT RESET			

- This screen will displays the vertical temperature controllers monitoring screen, and we can see the actual temperature of the seal bars.

- Fault button indicates the vertical temperature controllers either healthy or fault conditions.
- When we switch on the vertical temperature controllers Temp.ok button will come to healthy (green), otherwise it is in fault condition (red).
- When we touch the fault reset button it will reset the any error generated in the sealing system.

VERTICAL SEAL MANUAL: This screen related to Vertical sealing system

02.12.2015 (WED) **VERTICAL SEALING SYSTEM MANUAL OPERATION** 12:21:12 PM 17

VERTICAL SEAL ON	ON	HEATING SELECTED VERTICAL SEAL	1	2
VERTICAL SEAL-1 ACTUAL TEMPERATURE	0 deg.C.	VERTICAL SEAL READ SWITCH	[Red Square]	
VERTICAL SEAL-2 ACTUAL TEMPERATURE	0 deg.C.	TEMPERATURE OK	1	2
VERTICAL SEAL ON TIME	[Blue Box] m.sec.	VERTICAL SEAL-1 TRIGGER INDICATION	[Red Square]	
		VERTICAL SEAL-2 TRIGGER INDICATION	[Red Square]	

HOME **MENU** **BACK**

➤ Vertical solenoid Manual On

By Pressing this soft button we can manually Switch On or / and Switch Off the Vertical pneumatic cylinder Solenoid.

➤ Vertical seal Read S/W

This button displays the Vertical close read Switch On and Switch Off positions.

➤ Vertical seal bar Close time

We can increase or decrease the Vertical sealing system ON time by touching on the numerical data.

➤ Vertical seal bar selection indication

By using this button we can shows the vertical seal pushbuttons either on or off condition.

- In this we have 2 lamp buttons and 2 numerical data buttons.
- Impulse seal 1 trigger indication.
- Impulse seal 1 actual temp.
- Impulse seal 2 trigger indication. & Impulse seal 2 actual temp.

HORIZONTAL SEAL MANUAL:

02.12.2015 (WED)		HORIZONTAL SEALING SYSTEM MANUAL OPERATION		12:21:48 PM 18	
HORIZONTAL SEAL ON		<input type="button" value="ON"/>		HEATING SELECTED HORIZONTAL SEAL <input type="button" value="ON"/>	
HORIZONTAL SEAL ON TIME		<input type="text" value="0"/> m.sec.		HORIZONTAL SEAL OPEN READ SWITCH <input type="button" value="ON"/>	
U.S TRIGGER BI-PASS		<input type="button" value="ON"/>		HORIZONTAL SEAL CLOSED READ SWITCH <input type="button" value="ON"/>	
				ULTRASONIC TRIGGER <input type="button" value="ON"/>	
<input type="button" value="HOME"/>		<input type="button" value="MENU"/>		<input type="button" value="BACK"/>	

- This screen related to horizontal sealing system.

➤ Horizontal solenoid Manual On

By Pressing this soft button we can manually Switch On or / and Switch Off the horizontal pneumatic cylinder Solenoid.

➤ Horizontal seal Read S/W

This button displays the Horizontal close read Switch On and Switch Off positions.

➤ Horizontal seal bar Close time

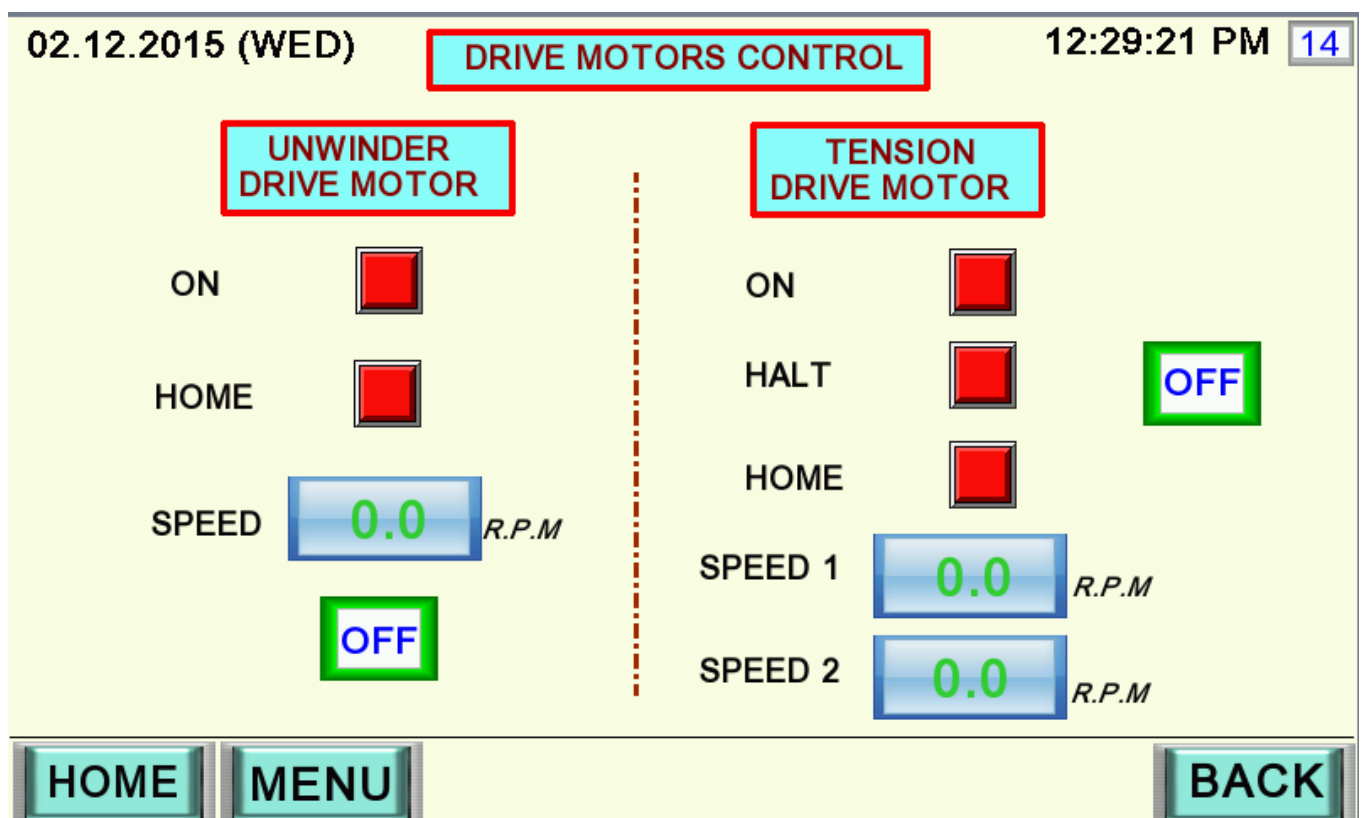
We can increase or decrease the Horizontal sealing system ON time by touching on the numerical data.

➤ Horizontal seal bar selection indication

By using this button we can shows the Horizontal seal push buttons either on or off condition. In this we have 2 lamp buttons and 2 numerical data buttons.

➤ Ultrasonic seal 1 trigger indication.

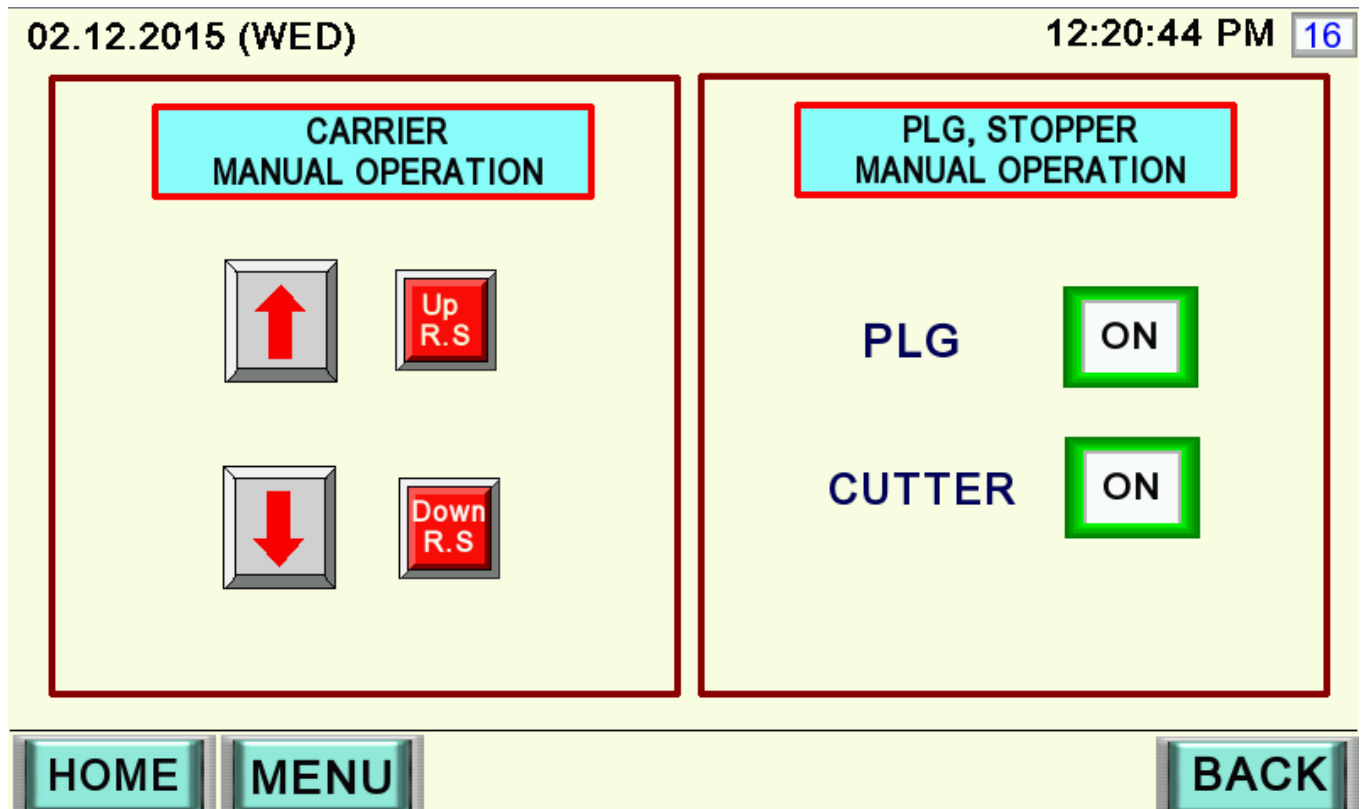
STEPPER CONTROL:



- This screen displays the Dancer positions by on condition of the corresponding three sensors positions.
- When the dancer is at ON sensor the stepper motor will run , When the dancer is at Halt sensor the stepper motor will be in Halt position, When the dancer is at Home sensor the stepper motor will be in Home position,

- We cannot change the speed of the Unwinder motor because this motor speed varies feedback of the laser sensor. This button shows only speed of the unwinder not for change.
- We can change the speed of the Tension motor by changing the rpm of the Tension motor.

MANUAL CARRIER, PLG & CUTTER



- This screen will indicate the manual carrier up / down, PLG Operation and cutter manual operations screen
- We have to go to run the carrier manually either up or down please select this screen.
- We can operation PLG and Cutter manual by using soft touch button on the screen. If it is in ON mode it will OFF vice versa. To turn of them again touch the button.

CUP FILLER MANUAL:

02.12.2015 (WED)		CUP FILLER		12:19:24 PM 28	
CUP FILLER MANUAL ON	<input type="button" value="ON"/>	CUP FILLER SELECTION ON	<input type="button" value="ON"/>		
FEEDER TO DUMP	<input type="button" value="ON"/>	CUP FILLER SOL. O/P	<input type="button" value="ON"/>		
ANTI_STATIC AIR BI-PASS	<input type="button" value="OFF"/>	CUP FILLER GATE O/P	<input type="button" value="ON"/>		
ANTI_STATIC POWER BI-PASS	<input type="button" value="OFF"/>	DUMP R.S.	<input type="button" value="ON"/>		
<input type="button" value="HOME"/> <input type="button" value="MENU"/>		<input type="button" value="BACK"/> <input type="button" value="NEXT"/>			

- This screen monitors the condition of the cup filler.
- We can switch on the cup filler manual on button, cup filler operates manually.
- Cup filler selection button comes to green color, if we are select the Cup filler selection push button.
- We can turn ON/OFF the Anti-Static Air and Anti-Static ionizer using by-pass function in the screen.

CUP FILLER SELECTION

02.12.2015 (WED)

CUP FILLER SELECTION

12:28:03 PM 15

PRODUCT	1 GRAM	2 GRAMS	3 GRAMS	
AS	SELECTION	SELECTION	SELECTION	Servo Value 0
SS	SELECTION	SELECTION	SELECTION	PLC Value 0
MS	SELECTION	SELECTION	SELECTION	

ACTIVATED CARBON SIEVES

1 GRAM

SERVO ON/OFF
ON
Run

Servo Ready ☒
Position Complete ☒
Servo No Fault ☒

HOME MENU NEXT

- This screen monitors the condition of the cup filler servo and also we can material and gram by pressing particular material related soft buttons on the screen.
- And before select the particular SELECTION button please switch on the SELECTION ON / OFF button.
- For example if we select the SS material 2 GRAM, servo motor goes to particular value and stop the particular value.
- Before that we are store the values in plc memory with the help of cup filer programmer screen.

NOTE: if we are select the higher grams to lower grams, before that remove the material of the brush, otherwise gears will be damaged.

CUP FILLER PROGRAMME

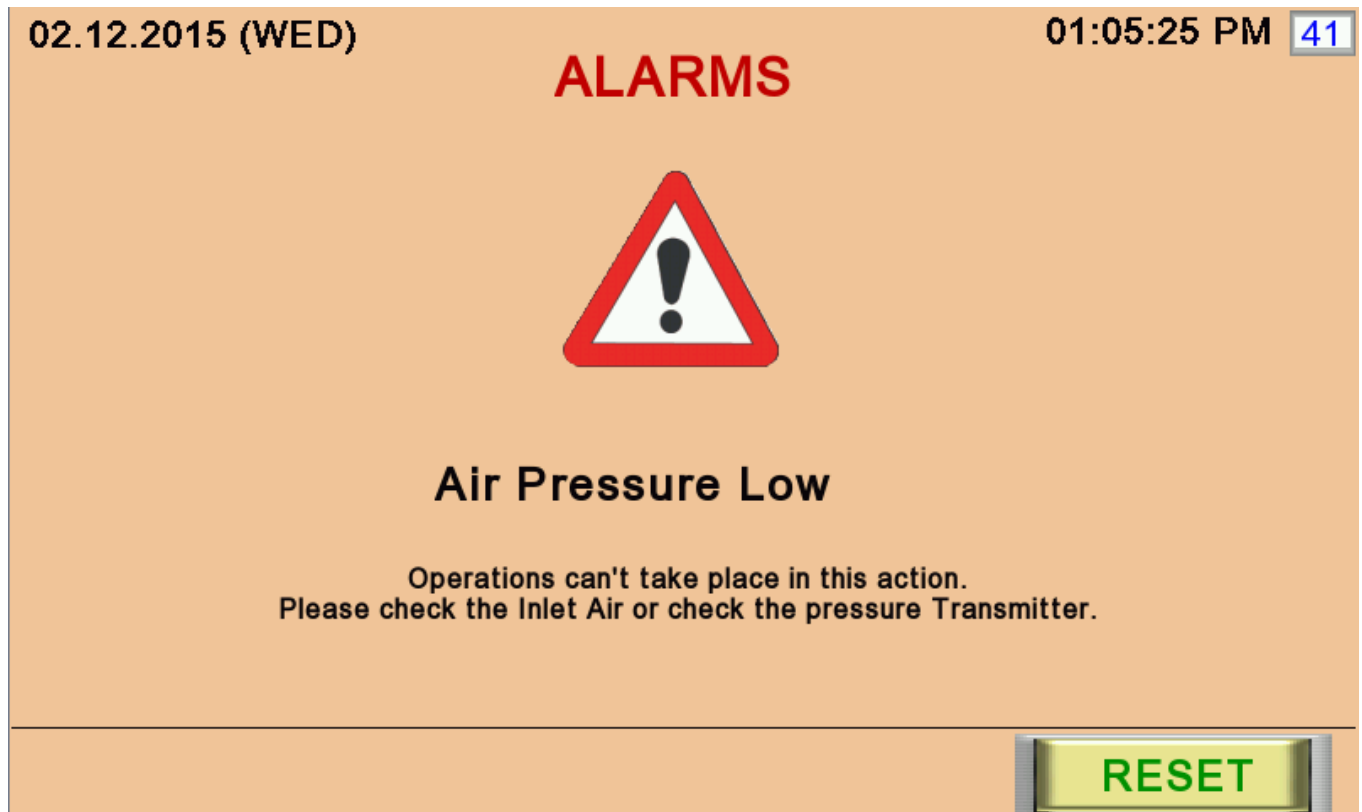
02.12.2015 (WED)		CUP FILLER PROGRAMME			12:28:28 PM 27	
PRODUCT	1 GRAM	2 GRAMS	3 GRAMS	Servo Value		
				<input type="text" value="0"/>		
AS	0	0	0	PLC Value		
				<input type="text" value="0"/>		
SS	0	0	0	Close Open		
MS	0	0	0	Servo Ready <input type="checkbox"/>		
PASSWORD	High Limit(Close):	0		Position Complete <input type="checkbox"/>		
	Low Limit(Open):	0		Servo No Fault <input type="checkbox"/>		
HOME		MENU		BACK		

- This screen protected by password.
- This screen helps to set the weight of the material by switch on the servo.
- After set the gram material to select the program button on the particular weight of the material button, then store the particular value stored in plc memory.
- Lower and higher limit values shows the servo moment zero position and higher position, servo do not run the cross of these values.
- By using the open and close buttons to adjust the servo positions either or close.
- Servo goes to faulty, fault button will comes to healthy.
- Servo and plc value buttons indicates present position of the servo.

EMERGENCY STOP ALARM

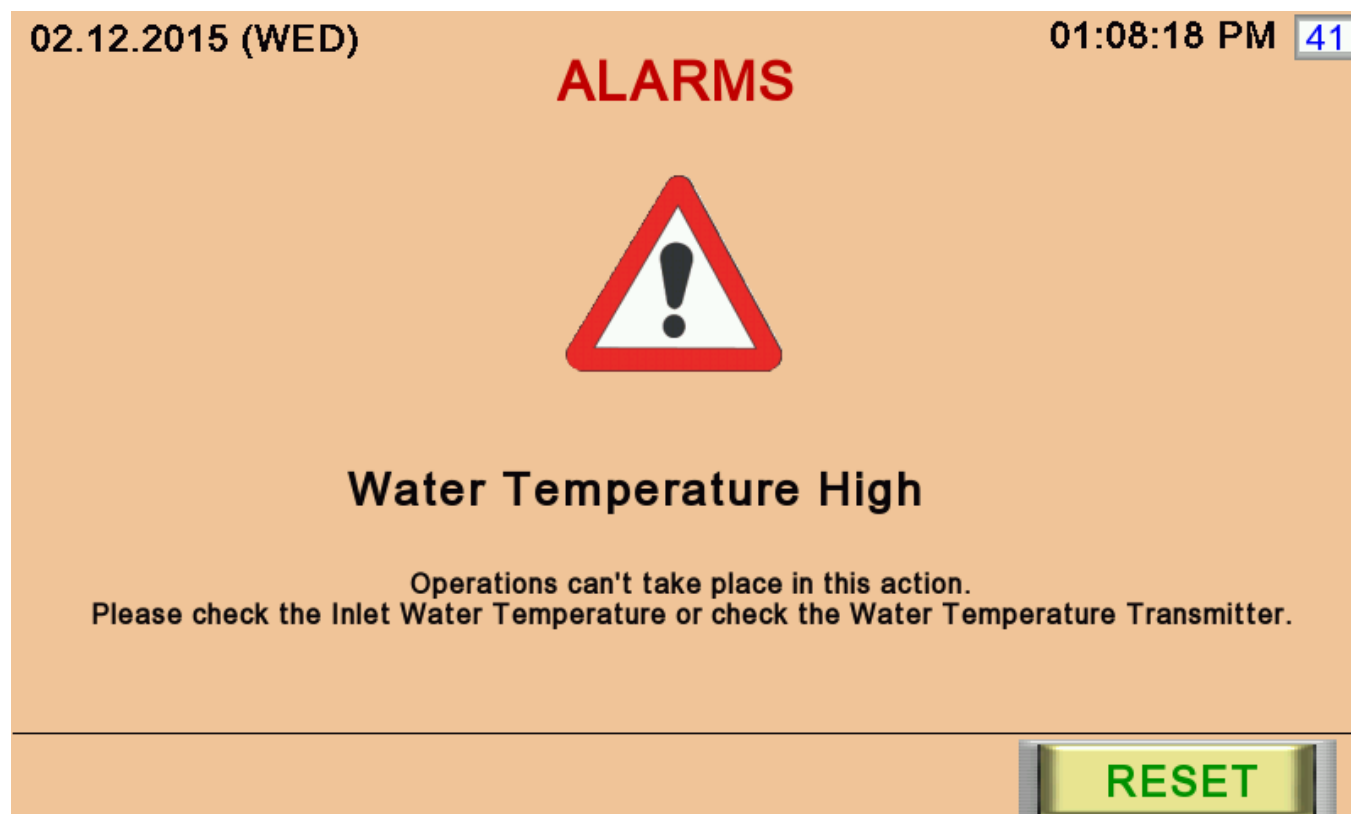
- Before start the cycle start, if we are press the emergency stop this alarm will occur.
- Suppose we have press the RESET, it will not change to previous screen. Remove the alarm or correct the error and press reset.

AIR PRESSURE ALARM



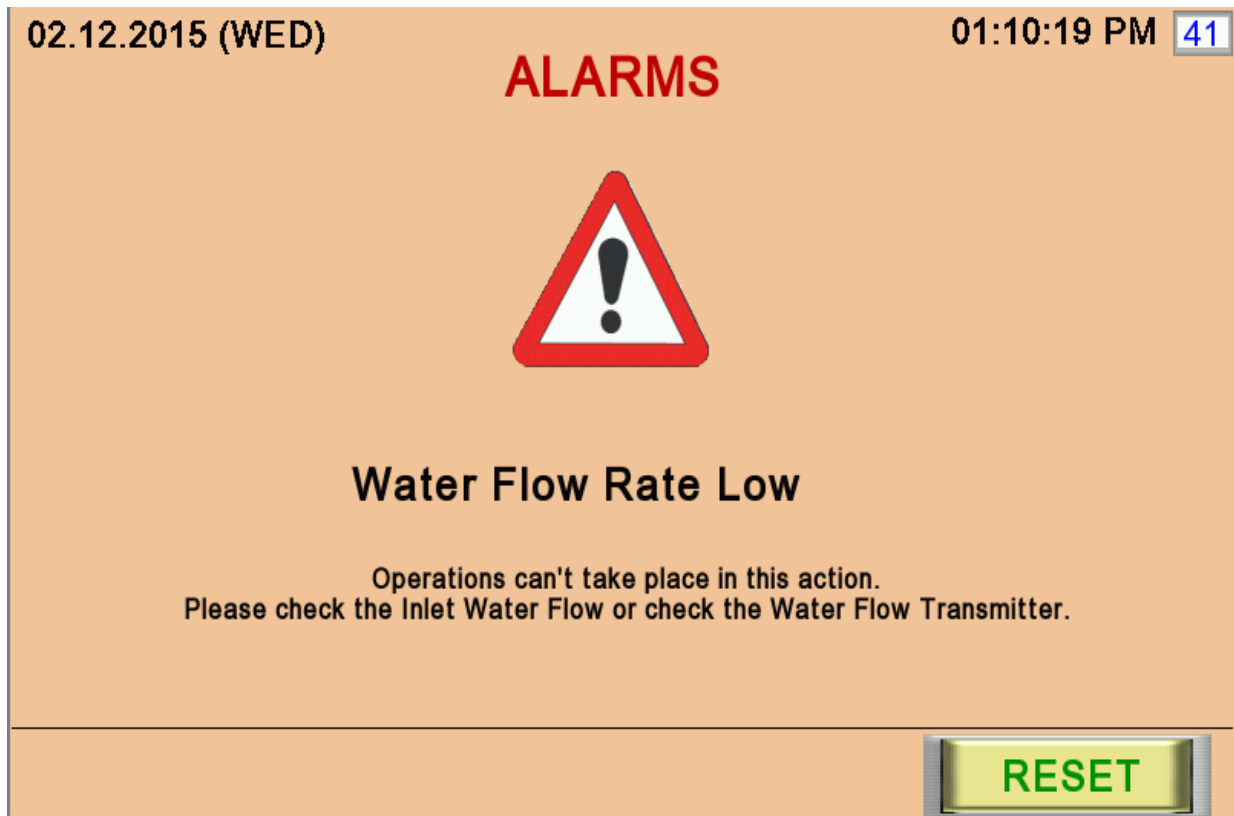
- Before start the cycle start, if we switch off the FLR unit this alarm will come.
- And another case is machine in running condition suddenly air pressure goes to low condition same alarm will comes.
- When this alarm coming in running condition after completion of one cycle machine will stops.
- To remove the alarm check the air pressure in okay and switch on the FLR by pressing Air PB.

WATER TEMPERATURE ALARM



- Before start the cycle start, if we switch on the water temperature push button and water temperature cross the set point value this alarm will come.
- And another case is machine in running condition suddenly water temperature cross the set point value same alarm will comes.
- When this alarm coming in running condition after completion of five cycle machine will stops.
- To remove this alarm and run the machine please check water temperature and press reset.

WATER FLOW ALARM



- Before start the cycle start, if we switch OFF the water flow motor and water flow down the set point value this alarm will come.
- And another case is machine in running condition suddenly water flow down the set point value same alarm will comes.
- When this alarm occurred in the running condition, machine will suddenly stops.
- Suppose we have press the reset, the alarm pop up will disable, machine could not start again.

INPUTS

- Particular input goes to healthy position the lamp will comes to green color, otherwise it is in red color.

02.12.2015 (WED)		INPUTS 1/4		12:22:55 PM 19	
MAIN MODULE PART-1					
CYCLE ON (P.B.)	0.00	TAKE AWAY CONVEYOR (P.B.)	0.06		
CYCLE OFF (P.B.)	0.01	CUP FILLER (P.B.)	0.07		
EMERGENCY STOP	0.02	FILM READY (P.B.)	0.08		
H.IMPULSE (P.B.)	0.03	AIR (P.B.)	0.09		
SPARE	0.04	V.IMPULSE 1 (P.B.)	0.10		
V.IMPULSE 2 (P.B.)	0.05	WATER TEMP(P.B.)	0.11		

HOME MENU
BACK NEXT

02.12.2015 (WED)		INPUTS 2/4		12:23:14 PM 20	
MAIN MODULE PART-2					
V.HEATER 1 TEMP. OK (I.S)	1.00	SPARE	1.06		
V.HEATER 1 FAULT (I.S)	1.01	SPARE	1.07		
V.HEATER 2 TEMP. OK (I.S)	1.02	SPARE	1.08		
V.HEATER 2 FAULT (I.S)	1.03	SERVO FAULT (I.S)	1.09		
H.HEATER 2 TEMP. OK (I.S)	1.04	SERVO READY (I.S)	1.10		
H.HEATER 2 FAULT (I.S)	1.05	SERVO POSITION COMPLETED (I.S)	1.11		

HOME MENU
BACK NEXT

02.12.2015 (WED)

INPUTS 3/4
EXP. MODULE PART-112:23:41 PM **21**DANCING CYLINDER
SENSOR-1 (P.S) **2.00**AIR PRESSURE
FAULT (I.S) **2.06**DANCING CYLINDER
SENSOR-2 (P.S) **2.01**WATER FLOW
SWITCH (I.S) **2.07**DANCING CYLINDER
SENSOR-3 (P.S) **2.02**SPARE **2.08**SPARE (P.B) **2.03**CARRIER UP (R.S) **2.09**WATER TEMP.
ALARM (I.S) **2.04**CARRIER DOWN (R.S) **2.10**UNWINDER HOME
SENSOR (P.S) **2.05**VERTICAL CYLINDER
CLOSE (R.S) **2.11****HOME****MENU****BACK****NEXT**

02.12.2015 (WED)

INPUTS 4/4
EXP. MODULE PART-212:24:08 PM **22**HORIZONTAL OPEN (R.S) **3.00**SPARE **3.06**HORIZONTAL CLOSE (R.S) **3.01**SPARE **3.07**CUP FILLER DUMP (R.S) **3.02**SPARE **3.08**UNWINDER MIDDLE
SENSOR (P.S) **3.03**SPARE **3.09**UNWINDER END
SENSOR (P.S) **3.04**SPARE **3.10**CUP FILLER END (R.S) **3.05**SPARE **3.11****HOME****MENU****BACK****OUTPUTS**

- Particular Output goes to healthy position the lamp will comes to green color, otherwise it is in red color.

02.12.2015 (WED)

OUTPUTS 1/5
MAIN MODULE PART-212:24:50 PM **24**CUP FILLER
SERVO RUN CMD**101.00**

ULTRASONIC ON(I.P.B)

101.04DISABLE UNWINDER
STEPPER DRIVE**101.01**

V.SEAL 2 LAMP (I.P.B)

101.05DISABLE TENSION
STEPPER DRIVE**101.02**TAKE AWAY
CONV. LAMP (I.P.B)**101.06**SERVO
ALARM RESET**101.03**CUP FILLER
LAMP (I.P.B.)**101.07****HOME****MENU****BACK****NEXT**

02.12.2015 (WED)

OUTPUTS 2/5
EXP. MODULE PART-1/112:25:10 PM **25**WATER TEMP.
LAMP (I.P.B)**102.00**CYCLE ON
LAMP (I.P.B.)**102.04**FILM READY
LAMP (I.P.B)**102.01**CYCLE OFF
LAMP (I.P.B.)**102.05**

AIR LAMP (I.P.B.)

102.02

V.SEAL 1 LAMP (I.P.B)

102.06

BUZZER LAMP

102.03

H.SEAL LAMP (I.P.B)

102.07**HOME****MENU****BACK****NEXT**

02.12.2015 (WED)

OUTPUTS 3/512:25:34 PM **26**

EXP. MODULE PART-2/1

SPARE

103.00WATER TEMP.
LAMP (I.P.B)**103.04**

SPARE

103.01ANTI STATIC
ON (R)**103.05**

SPARE

103.02

SPARE

103.06CUTTER MOTOR
ON (R)**103.03**

SPARE

103.07**HOME****MENU****BACK****NEXT**

02.12.2015 (WED)

OUTPUTS 4/512:25:56 PM **34**

EXP. MODULE PART-1/2

CARRIER UP SOL...
(PCB I/P)**104.00**C.FILLER FEEDER SOL...
(PCB I/P)**104.04**CARRIER DOWN SOL...
(PCB I/P)**104.01**A.SEAL GRIPPER SOL...
(PCB I/P)**104.05**VERTICAL SOL...
(PCB I/P)**104.02**GRIPPER-1 SOL...
(PCB I/P)**104.06**HORIZONTAL SOL...
(PCB I/P)**104.03**C.FILLER GATING SOL...
(PCB I/P)**104.07****HOME****MENU****BACK****NEXT**

02.12.2015 (WED)		OUTPUTS 5/5		12:26:16 PM		35	
EXP. MODULE PART-2/2							
ANTISTATIC SOL... (PCB I/P)		105.00		V. SEAL-1 HEATER START SIGNAL		105.04	
GRIPPER-1 SOL... (PCB I/P)		105.01		V. SEAL-2 HEATER START SIGNAL		105.05	
PLG SOL... (PCB I/P)		105.02		U.S SEAL START SIGNAL		105.06	
MAIN AIR SOL... (PCB I/P)		105.03		ALL HEATER RESET SIGNAL (R)		105.07	
HOME		MENU		BACK			

8. OPERATION SEQUENCE:

- Firstly switch on the vertical impulse heater 1 & 2, and Ultrasonic Horizontal push buttons.
- Wait until the sealing bars are cooled up to pre-determined temperatures.
- And then check the pressure sensor to supply compressed air to the machine.
- Note: adequate pressure of compressed air may be different depending on the conditions the usage of the machine.
- Before start the machine once will check the pouch length and weight of the material to the suitable pouch length.
- After conforming mount the packaging material and thread it through the machine.
- Push the film ready push button.
- Now push the cycle on (with the cup filler switch OFF), and make some empty packages.
- Stop the machine after horizontal sealer seal the film 2 to 3 times. Check the empty packages made.

- Push the cycle on and make some empty packages.
- Stop the machine and check following points
 - Pouch length
 - Pouches sealed at the mark pitch
 - Vertical and horizontal seal
 - Cut off position

Note: Be sure stop the machine before checking above points.

- After conforming all or foregoing points, start the machine, with cup filler switch on, and start production.
- After production started, check again all those points listed above. Repeat these checks every 30 minutes after production started.
- To set the pouch length, either increase or decrease, pouch offset value and ratio of the V.Seal: V.Seal go to main screen of the HMI and enter the values.
- To check the no.of pouches / minute please select the pouch data screen or Auto Screen.
- To see the vertical sealers are in healthy or fault please select the vertical impulse screen.
- To see the vertical sealer are in healthy or fault please select the vertical impulse screen.
- If you adjust speed of the stepper motor tension select the stepper drives screen.
- We cannot change the speed of the Unwinder motor because this motor speed varies feedback of the laser sensor. Unwinder speed button shows only speed of the unwinder not for change.
- If we operate the vertical cylinder in manually please select the vertical manual operation screen on the HMI.
- And also in this screen we shows the read switch position.

- If we operate the horizontal cylinder in manually please select the vertical manual operation screen on the HMI.
- And also in this screen we shows the read switch position.
- If we select the type of material and related to particular gramage please select the cup filler selection screen on the HMI.
- For example we have selected SS material and 2 gram, those data are displayed in the bottom of the screen.
- If we have run the servo in manually please switch on the selection on/off button on the cup filler selection screen on the HMI.
- To set grams values of the different material please select the cup filler program screen on the HMI.
- This screen is protected by the password.
- Now we need to set the AS material and 3 gram weight servos moves manually either open or close with the help of open and close buttons on the screen.
- Now we get correct weightage of the material please select the program button on the related material and gram.
- We have to run the carrier in manually up and down please select the manual carrier up and down screen.
- And we want to go to up position please hold the up arrow button until to reach the up read switch.
- And we want to go to down position please hold the down arrow button until to reach the down read switch.
- To operate the cup filler in manually please select the cup filler manual operation screen on the HMI.
- And also in this screen we will shows the both of the feeder and gating solenoids outputs.
- Before start the cycle start, if we are press the emergency stop this alarm will occur.

- Suppose we have press the bypass, after 10 sec again it will comes.
- Whenever we release the emergency stop push button alarm will disable and machine will start.
- Before start the cycle start, if we switch off the FLR unit this alarm will come.
- And another case is machine in running condition suddenly air pressure goes to low condition same alarm will comes.
- When this alarm coming in running condition after completion of one cycle machine will stops.
- Whenever sensor cross the set value alarm will be disable and machine will start.
- Before start the cycle start, if we switch on the water temperature push button and water temperature cross the set point value this alarm will come.
- And another case is machine in running condition suddenly water temperature cross the set point value same alarm will comes.
- Whenever controller down the set value alarm will be disable and machine will starts again.
- Before start the cycle start, if we switch OFF the water flow motor and water flow down the set point value this alarm will come.
- When this alarm coming in running condition machine will suddenly stops.
- Whenever water flow switch cross the set value alarm will be disable and machine will starts again.
- Film roll on the unwinder motor will goes to end position, “Film roll goes to end position this pop up alarm will come”.

9. MAINTANENCE

- a. Daily Cleaning is required to meet pharmaceutical cleaning standards.
- b. Carrier linear guide way Unit should be cleaned and applied grease whenever necessary for smooth and efficient operation.

- c. No maintenance work should be carried out when the carrier cylinder is ON.
- d. There should be no accumulation of carbon particles on the guide ways it will cause damage to the carrier system of the machine and reduces the lifetime.
- e. If you found any carbon particle, press "PROCESS OFF" or "EMERGENCY STOP" and clean the screw. Now press "PROCESS ON" or release the "EMERGENCY STOP". (Please note that whenever you press "EMERGENCY STOP" and release it, you need to press "PROCESS ON" once again to resume the process)
- f. Air should be maintained minimum 5 bars.
- g. The FLR unit required daily cleaning.
- h. All are proximity sensors should be protected from the water.
- i. Don't do increase or reduce the flow control valve of the carrier cylinder.